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Amendments to the Claims:

Please amend claims 26, 27, 31, 35, 36 and 38 cancel claims 30, 34, 37 and 39 as shown in the following listing of claims. This listing of claims will replace all prior versions and listings of claims in the application:

1-25. (cancelled)

26. (currently amended) A method of transmitting a first parallel data stream over a fiber optic channel, comprising:

converting the first parallel data stream into a plurality of second parallel data streams;

encoding the plurality of second parallel data streams into symbols using a plurality of symbol encoders;

performing an inverse Fourier transform on the symbols, thereby producing a plurality of transformed values;

parallel process converting the plurality of ~~second parallel data streams~~ transformed values into a plurality of analog signals;

combining the plurality of analog signals into a single analog signal;

converting the single analog signal into an optical signal; and

coupling the optical signal to the fiber optic channel.

27. (currently amended) A method as in claim 26 wherein the parallel process converting the plurality of ~~second parallel data streams~~ transformed values into a plurality of analog signals comprises:

~~encoding the plurality of second parallel data streams into symbols in a plurality of symbol encoders;~~

~~converting the symbols into a plurality of transformed values in an inverse Fourier transformer; and~~

converting the transformed values into analog representations ~~in~~ using a plurality of digital‑to‑analog converters.

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28. (withdrawn) A method as in claim 26 wherein the parallel process converting the plurality of second parallel data streams into a plurality of analog signals further comprises:

modulating the second parallel data streams in a plurality of modulators;

mixing the modulated signals in a plurality of mixers and

filtering the mixed signals in a plurality of band pass filters.

29. (previously presented) A method as in claim 26 wherein the converting the first parallel data stream into a plurality of second parallel data streams comprises accepting the first parallel data stream from an interface selected from the interfaces consisting of a ten gigabit media independent interface (XGMII) and a ten gigabit extended Attachment Unit Interface (XAUI).

30. (cancelled)

31. (currently amended) A method of converting an optical signal received from a fiber optic channel into a parallel data stream, comprising:

converting the optical signal received from the fiber optic channel into an analog electrical signal;

sampling and holding successive values of the analog electrical signal with a plurality of sample and hold elements to produce a plurality of analog values;

converting the plurality of analog electrical signal values into a plurality of digital baseband signals;

performing a Fourier transform on the plurality of digital baseband signals, thereby producing a plurality of symbols; and

converting decoding the plurality of baseband signals into symbols using a plurality of decoders to produce a parallel data stream.

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32. (withdrawn) A method as in claim 31 wherein the parallel process converting the analog electrical signal into a plurality of baseband signals comprises mixing the analog electrical signal with a plurality of mixing frequencies to produce a plurality of baseband signals.

33. (withdrawn) A method as in claim 32 wherein the parallel process converting the analog electrical signal into a plurality of baseband signals comprises mixing the analog electrical signal with a plurality of mixing frequencies to produce a plurality of baseband signals further comprises filtering the plurality of signals mixed with the plurality of mixing frequencies to produce a plurality of baseband signals.

34. (cancelled)

35. (currently amended) A method as in claim 31 wherein the converting of the plurality of analog electrical signal values into a plurality of digital baseband signals further comprises:
~~sampling and holding successive values of the analog electrical signal;~~
providing the held analog values to a plurality of ~~A/D~~ analog-to-digital converters; and
converting the held values to a plurality of digital baseband signals.

36. (currently amended) A method as in claim 31 wherein the ~~parallel process~~ converting of the plurality of analog ~~electrical signal in~~ values into a plurality of digital baseband signals ~~further~~ comprises:
~~sampling and holding successive values of the analog electrical signal;~~
providing the held analog values to a single ~~A/D~~ analog-to-digital converter; and
converting the held values to a plurality of baseband digital signals.

37. (cancelled)

38. (currently amended) A method of transmitting and receiving a first parallel data stream over a fiber optic channel, comprising:
converting the first parallel data stream into a plurality of second parallel data streams;

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encoding the plurality of second parallel data streams into symbols using a plurality of symbol encoders;

performing an inverse Fourier transform on the symbols, thereby producing a plurality of transformed values;

parallel process converting the plurality of ~~second parallel data streams~~ transformed values into a plurality of analog signals;

combining the plurality of analog signals into a single analog signal;

converting the single analog signal into an optical signal;

coupling the optical signal onto the fiber optic channel;

converting the optical signal received from the fiber optic channel into an analog electrical signal;

sampling and holding successive values of the analog electrical signal with a plurality of sample and hold elements to produce a plurality of analog values;

parallel process converting the plurality of analog ~~electrical signal~~ values into a third plurality of parallel digital signals;

performing a Fourier transform on the third plurality of parallel digital signals, thereby producing a plurality of symbols; and

~~converting~~ decoding the ~~third~~ plurality of ~~parallel digital signals into~~ symbols using a plurality of decoders to produce a fourth parallel data stream.

39. (cancelled)

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